# California Water Data Meeting

## Natural Resources Building – August 31st, 2011

Please see separate attendees list for names and contact information for participants

The following is a summary of introductions and the presentations given by some of the participants grouped by organization, at the end there is a summary of concluding remarks by Kamyar Guivetchi and proposed next steps.

## Department of Water Resources

Bill Ehorn
Northern Region Office - Well Logs and Groundwater well data for the Northern California area. Handles public requests and produces groundwater change and contour maps.

Curtis Anderson
Northern Region Office - Manages folks that collect data out in the field on Northern California waterways.

Eric Senter
Manages Water Data Library and works on CASGEM.

Greg Smith
Water Planning Information Exchange (Water PIE) – This wouldn't be a warehouse but rather a way of connecting to the other data sources. The plan for Water PIE is for it to look much like Integrated Water Resources Information System. This would be great to have GAMA, SWAMP, CEDEN, CDEC, CIMIS, CITRIS, Sierra Nevada Research Institute data brought in and spatially displayed (more information on various hydrologic monitoring at DWR). They're working on a scope of work now and hope to have a contract out by November with a prototype working by mid-to-next year. (Kamyar added) This is a hub and spoke model, us building the hub and helping data providers build their spokes. One of the things to overcome is the "data dictionary" so we're speaking the same language. One idea that was brought up by Jon Marshack is that we could have the basemap in that environment be the National Hydrography Dataset. Additionally, we could have CEDEN and Water PIE feed each other (Jon Marshack). Integrated Regional Water Management plans can be displayed on IWRIS.

Kamyar Guivetchi
Working on the California Water Plan and the implementation of recommendations contained within it. Working on Water PIE.

Kent Frame
Works with Data Collection projects – CIMIS

Manucher Alemi
Water Use and Efficiency – conducts a statewide land use survey program. The last complete set of data collected was 2001, they do data acquisition continuously but are unable to complete it annually. Additionally they get annual use data of urban water from suppliers and local water districts on both water supply information and water use information. Sentate Bill SB X7(sp?) requires many parties to work together to create a standardized reporting form to help people report water info. Water Use Standardized form/portal – they're looking at developing this form, the project is in its earliest stages. Kent Frame spoke further on this – We have a project team, the idea they're trying to develop is using a portal. They're working on a data "scraping" program to find data we may need and insert this data into the "water use data page." They'll have an administrative module that will allow the department to run reports on what they need. Local water agencies can use this as well. This portal is currently for water use but they may include water diversion data. They're doing it by user authentication (water agency name) rather than by water right as some other agencies categorize. This would be a good area to coordinate in. Ultimately they'd like to get to one portal to populate all of the department's needs. If this works it can function for the water plan. There are a lot of details that need to work out but the good news is that the networking is in place – Timeline: they're hoping to have a good part of it done by the middle of next year. A public workshop listening session is going to be September 13th to provide feedback on the functionality they want and the needs they would like to be met.

Mary Scruggs
CASGEM – They're still in the process of implementing the system, agencies are monitoring the groundwater basins for groundwater elevations. Agencies have applied and we're in the process of going through applications. First round of data input is Fall 2012. All the CASGEM agencies are going to be public so we're asking no public supply wells be included in this. A lot of the codes are the same as Water Data Library for better consistency. They have the goal of making the data available as a web service. To the extent that GAMA might be pulling the data from WDL they might be able to get it from CASGEM too? John Borkovich said that they don't get elevation data from us. The difference between DWR wells and Waterboards is that ours are deeper wells or basin wells and Waterboards may be getting more data from cleanup information than we do. John Borkovich would like this information from CASGEM integrated with the GeoTracker GAMA system.

Paula Landis
Oversees Regional Offices, the Integrated Regional Grant Program and the CASGEM program. Paula advocates both data acquisition and collaboration.

Rich Juricich
Heads up water plan tool development and modernizing data processes for the water plan.

Tito Cervantes
Northern Region Office - Chief of Land and Water Use Section – Lead person for water balance team.

## CSU Fresno

David Zoldoske
CSU Water - CSU Chancellor's office, expected to try and coordinate water programs at all UCs. One project is a joint project with NASA and works with DWR at improving irrigation scheduling and potentially save water (CIMIS?). Another project is the 8 county region from including Kern County to get the valley to speak in one voice. Some collegues at CSU Bakersfield, look at a lake in the area and the sediments within it to try and interpret the historical runoff into Tulare lake. Another project is to improve agricultural pumping, these numbers are pumping levels, standing water and yield – this may be helpful for planning purposes. This is a resource for the agencies. Another potential provider of data is COAST (Kristie Kamer is the executive director) they work on coastal waters.

## State Water Resources Control Board

Bob Rinker
Division of Water Rights

John Borkovich
GeoTracker GAMA Presentation – Link to GeoTracker GAMA – John works on development of the GAMA GeoTracker. Interested in collaboration and sharing data. GAMA was created in 2000 as a result of AB 599 it was decided that there be a collaborative pact with respects to groundwater quality. Program functions of GAMA: Coordinate with Water Agencies, Collect New Data, Combine New and Existing Data, Assess Groundwater Quality, Serve Information to the Public. Four current projects: Special Studies, Priority Basins, Domestic Wells and GeoTracker GAMA. "Priority Basins" is a groundwater monitoring program. "Domestic Wells" works with county public health agencies to sample private domestic wells – over 40% of the wells had nitrates above MCL. GeoTracker GAMA – this is a direct result of the intent of AB599 that there be a central data system. Data shared includes: CDPH, USGS, LLNL, DWR, DPR, State and Regional Boards. The initial focus of GAMA was groundwater quality but groundwater supply is very close to this and it was decided to include this as well. The GeoTracker GAMA system is capable of expanding. GeoTracker includes the ability to download the

data. Because of homeland security they have to remove the last few digits of the well locations for domestic wells. This site includes water reports and well boring logs (ones drilled in association with site cleanup) that are pertinent to the area. Additionally there are depth-to-water and groundwater elevation tools and you can produce hydrographs for these sites on GeoTracker easily. CDPH provides them a CD of the data on a quarterly basis. USGS is also updated quarterly. The site cleanup information is updated daily.

Jon Marshack
California Water Quality Monitoring Council Presentation – California Water Quality Monitoring Council Website – Overview of California Water Quality Monitoring Council and why we have it? Everyone needs data and we have different assessment methods and types, the Waterboard's assessment of impaired waters showed a problem of monitoring differently. Senate bill 1070 was made to maximize water quality data collection and to ensure this data is made available to the public. Monitoring Council Members include DWR, CA Natural Resources, CA Coastkeeper Alliance, SCCWRP, CDPH, CalEPA, Water Boards, East San Joaquin Water Quality Coalition, California Stormwater Quality Association, the Association of California Water Agencies and, the Klamath Watershed Institute. The monitoring approach is to have theme-based web portals to address the user questions. A theme specific workgroup develops monitoring and assessment methods and data management procedures, and coordinates the needs of those users. The role of the monitoring council is to establish procedures and policies, mywaterquality website (safe to drink, swim, fish, are our aquatic ecosystems healthy) each of those links goes to the portal specific to that theme. For example there is a safe to swim theme and the initial effort was to get the data that is readily available for viewers and to put it on a map based interface where the more detailed information is available. This swim page gives a link to the beach report card and you can see where to go swimming. There is also a map based interface that you can view the bacterial monitoring information too. On this same theme based page you can also view the impaired beaches. Additionally, they have on this same theme based portal the clean beaches initiative projects that are on those beaches. The second theme is on Safe to Eat (Fish), it offers information on fish consumption advisories and long term pollutant concentration numbers. The fish portal keeps information on the sources of contamination in California. The third theme is aquatic ecosystem health, this shows projects where wetland restoration is occurring, wetland condition assessments with CRAM scores. The task of monitoring, assessment and reporting has been broken up by beneficial use. Some of the opportunities and benefits are: providing answers to the public, providing framework to motivate and guide improvement on data (gaps and needs), allow people to understand how their dollars are spent. They've discovered that data management is an important issue when it comes to water data. There's a data management workgroup they have formed to address the problems. CEDEN offers web access to this data.

Karen Larsen

Surface Water Ambient Monitoring Program Handout – Website – WEMA – Also manages department that handles the IT dept. Looks at trends in watersheds. They have statewide and regional programs that put data into their SWAMP database which feeds into CEDEN. CEDEN is then served out to the public. Receiving water data collected by permitting is also used. CEDEN is both a data warehouse repository and a data exchange network. San Francisco Estuary Institute, Southern California Costal Water Resource, Central Valley(?) data centers all have their own local copies and serve them out to allow CEDEN to be able to harvest and serve it out. The regional data centers are responsible for working with citizen monitors to use their data.

Kevin Long
Division of Water Rights – Coordinates with Air Water Licensing and Use permits folks.

Shakoora Azimi
Works with SWAMP

## UC Berkeley

Alex Bayen
Works in Steve Glaser's group at CITRIS. Worked with Caltrans their traffic monitoring system and it's monitoring system. Works on producing real-time water data monitoring system. Also works on Delta Drifter Project (Floating Sensor Network Website).

Hugh Aldridge
Program Manager at CITRIS

Steve Glaser
CITRIS Presentation – Website creates data (snow melt, health and safety data), additionally they'd like to use other people's data and get to know people. Professor at UC Berkeley, Intelligent Water Infrastructure for California – their mission is to provide multi-disciplinary research and development to create a world-leading water information and management system. They would like to look at the water system as a cyber physical system using smaller better cheaper sensors. They have a nano fabrication sensor and now sensors can cost tens of dollars instead of tens of thousands of dollars. They have coals to support California, it's cities and towns, farmers and industry. They can do it over large areas because their sensors are wireless and inexpensive. They'd like to provide proof of principle in information management. Modern technology allows them to do this in real-time. They would like to measure things, and provide data to the people that need it. Enhancing the seasonal water-supply forecast can be done by increasing snowpack data, soil moisture and evapotranspiration numbers. Currently they have 4 data collection systems. They have 4 projects: Sierra Nevada Snowpack Project, Coastal Aquifer Recharge Project, Delta Drifter Project, Delta Levee (and canals) Project. They can

provide risk assessment and mitigation help with sensors to determine risk areas. Delta Drifter (Alex Bayen) these are a fleet of drifting sensors and they're equipped to collect real-time data (100 total, 40 active and 60 passive) they're building a data collection program to gather this data. In addition to being a service to the delta they work with Department of Homeland Security to assess levee breaches and with the Navy to provide depth information. Andrew Fisher is looking at real time monitoring of Managed Aquifer Recharge information that can be plugged into models. Planned Research: Look at more research options to improve understanding of the state water system. Why are we here? To listen and learn, build collaborations and build strong relationships.

## UC Merced

Nara Narahari
UC Merced (participated via WebEx)

Roger Bales
Sierra Nevada Research Institute Presentation – Website – Program Details – NSF Funded a program to build better hydrologic data. Bales views the first step as getting data and the second step sharing and using the data. His program measures aspects of the Sierra Nevada's expression of the water cycle. Flux towers are instrumented to measure various elements of the environment. They deploy sensors to provide prototypes for broader information systems and to begin getting better predictions. Acoustic Depth Probes can get more information about snow and they're connected with radios rather than wires to allow for greater deployment. Their environmental measurements are done through: Eddy Correlation (Flux towers), Embedded Sensor Networks for Snow Pack and, Lidar for detailed characterization of snowpack and vegetation. Sierra Nevada fractional snow covered areas are documented from MODIS (Moderate Resolution Digital Imaging Spectrometer) (in collaboration with JPL in California). The value added products are estimated daily snow melt. Bales has been working with Resources folks to begin researching the whole basin using hydrologic instrument clusters. This information system is going to be used in an attempt to better forecast hydrologic conditions. Once every water year they publish water data for the public. Their Data-Catalog is targeted so that anyone can build an interface and get what they need. The San Diego supercomputer is building some of the interfaces with NSF. Additionally they download CDEC data and provide value added products as well. They also have an archive of satellite data.

Summary
Kamyar said each of us are a dot here and we came to be through some new order or initiative. Each of these issues didn't start out connected but we can try to connect on the back to provide some additional value. What is the best venue? Water Quality Monitoring

Council or these meetings? We need to keep taking the next steps. Can the Water Quality Monitoring Council continue this meeting? DWR can provide a list of those attendees to Jon Marshack. The water plan can include lists of these resources as well. As part of the water plan, they're going to have a water technology caucus (David Zoldoske is to lead) in September or October – with the idea that we would develop recommendations to include in the water plan. If you're interested in being on the Water Technology Caucus please contact David Zoldoske.

Jon Marshack said the hardest thing is getting enough resources to do this. We need to look at where there is overlap and we may be getting duplicative data. Water Quality Monitoring network was looking at perhaps DWR taking on leadership of the collaboration.

Is it awkward to mix regulatory and non-regulatory monitoring? We will have to work this issue out.

Collectively we will have to petition the Legislature for additional resources. Before we do, we must look at the data gaps, start up costs, redundant monitoring, and what information is needed to assess the questions we are being asked and fulfill the missions of our programs.

# Next Steps

A meeting of the California Water Quality Monitoring Council Meeting on September 16th at the CalEPA Building, 1001 I Street, Sacramento in Room 1510. You can obtain more information from Jon Marshack.